



## SERVICE BULLETIN

Classification:

EC99-013c

Reference:

NTB00-006c

Date:

October 6, 2003

### ECM REPROGRAMMING FOR NISSAN VEHICLES

This amended version (NTB00-006c) updates the Service Information and Service Procedure Sections. Please discard all previously released paper copies of NTB00-006.

#### APPLIED VEHICLES:

1999 Frontier (D22)  
1999 Quest (V41)  
1999.5 Pathfinder (R50)  
All 2000 and later

#### SERVICE INFORMATION

- In-vehicle ECM reprogramming is available to update the ECM of certain 1999 vehicles (listed in Applied Vehicles above), and all 2000 and later vehicles.
- This reprogramming allows the vehicle ECM to be upgraded to the latest operating specifications without removal or replacement of the ECM.
- When an ECM has been reprogrammed it will display a new P/N on the CONSULT-II screen.

**NOTE:** ECM reprogramming will not effect NATS.

- ECM reprogramming requires the use of ASIST 8.0 or higher, and CONSULT-II with the ECU Reprogramming Software Card (orange color).
- Use the Service Procedure steps to transfer ECM reprogramming data from the ASIST PC to CONSULT-II, and from CONSULT-II to the vehicle ECM.
- Refer to the ECU Reprogramming Software Operations Manual (in ASIST) for additional information on using CONSULT-II for ECM reprogramming.

#### CAUTION

- An ECM should be reprogrammed **only** when required by a specific Nissan Technical Bulletin, or as otherwise directed by Nissan North America.
- The ECM can be permanently damaged if the reprogramming procedure is not followed **exactly**.
- Do not disturb (don't touch) the vehicle, CONSULT-II, or the DLC-II cable while ECM reprogramming is in progress.
- **If the ECM is damaged, it must be replaced.**

## SERVICE PROCEDURE

**NOTE:** When ECM reprogramming is required to repair a vehicle, a Technical Service Bulletin will be issued.

ECM reprogramming involves two general steps:

- Download (transfer) data from ASIST into CONSULT-II.
- Download new data from CONSULT-II into the vehicle (Reprogram ECM).

Before beginning the reprogramming procedure, use CONSULT-II and the Diagnostic Card (red/white one) to retrieve any stored DTC(s). Additional repairs may be necessary if there are DTC(s) not associated with a Reprogramming bulletin. Refer to the appropriate TSB or Service Manual.

### SETTING UP:

1. Install the Reprogramming Card into CONSULT-II.

- The Reprogramming Software Card is the “orange” Card.
- Use slot A—top slot (see Figure 1).

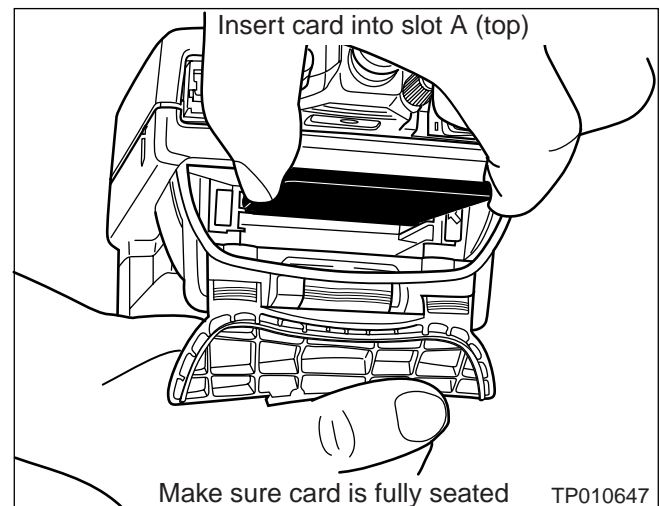


Figure 1

2. Connect the AC power supply to CONSULT-II.

3. Connect CONSULT-II to the ASIST PC with the special Ethernet cable (P/N 02002554 is printed on the cable).

A. Connect one end to CONSULT-II at the “PC port”.

B. Connect the other end to the ASIST PC at the “Ethernet card” connection port.

4. Confirm the CONSULT-II date and time are correctly set as follows:

(This is necessary to provide a valid print-out for warranty claims.)

A. With the Reprogramming card in slot A, turn “ON” CONSULT-II.

B. Touch **SUB MODE**.

C. Touch **SET DATE** (see Figure 2).

- 1) If the date is not correct, touch the **MONTH**, **DAY** or **YEAR** as needed. Then adjust it by using arrow keys. Once done, press **SAVE**, press **BACK**, and go to step D.
- 2) If the date is OK, press **BACK** and go to step D.

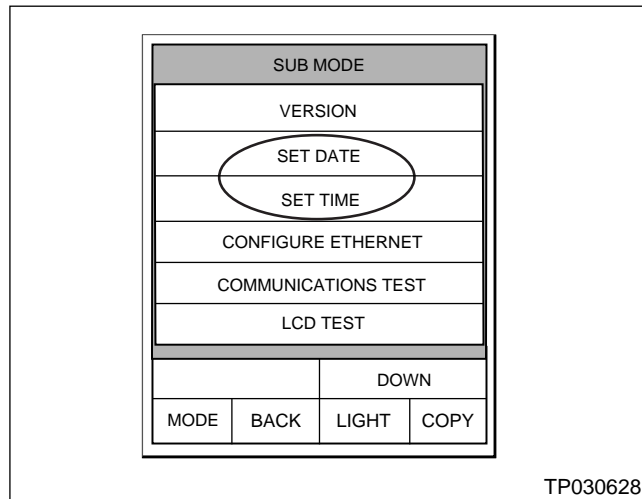


Figure 2

D. Touch **SET TIME** (see Figure 2).

- 1) If time is not correct, touch the **HOUR**, **MINUTE** or **AM/PM** as needed. Then adjust it by using arrow keys. Once done, press **SAVE**, press **BACK** and go to step 5.
- 2) If time is OK, press **BACK** and go to step 5.

#### IMPORTANT NOTE

- If your ASIST PC is already being used to perform ECM reprogramming, proceed to step 5 on the next page.
- **If you are unsure whether your ASIST PC has already been set up for ECM reprogramming, look in ASIST, under “CONSULT Utilities” – “CONSULT-II Info” – “NISSAN” – “ECU Reprogramming”. This will give you instructions for setting the Ethernet (IP) Address of the ASIST PC and CONSULT-II. You will need to do this before performing ECM reprogramming.**

## DOWNLOAD (TRANSFER) DATA FROM ASIST INTO CONSULT-II

- From the ASIST PC main menu screen, select "**CONSULT UTILITIES**" (see Figure 3).

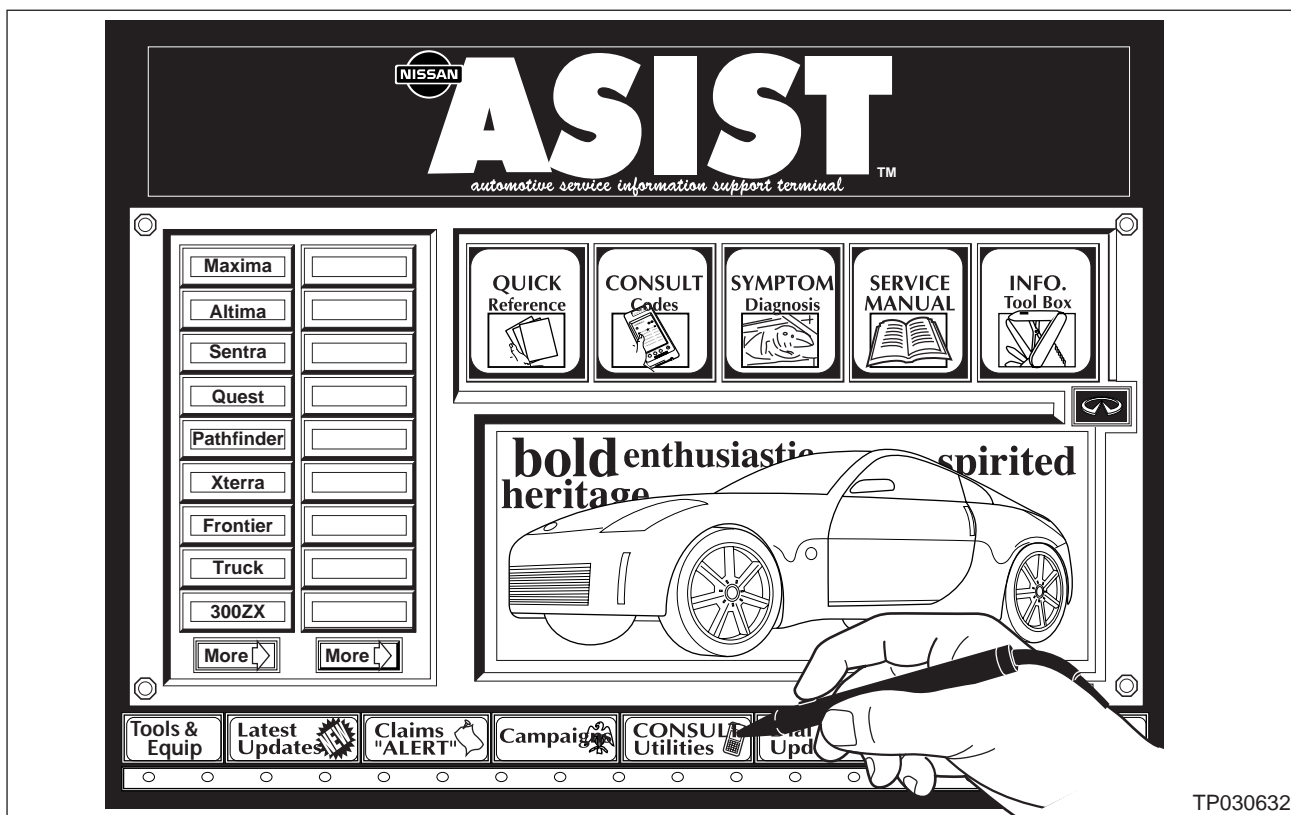


Figure 3

- From the "**CONSULT UTILITIES**" screen, select "**ECM / TCM DATA**" (see Figure 4).

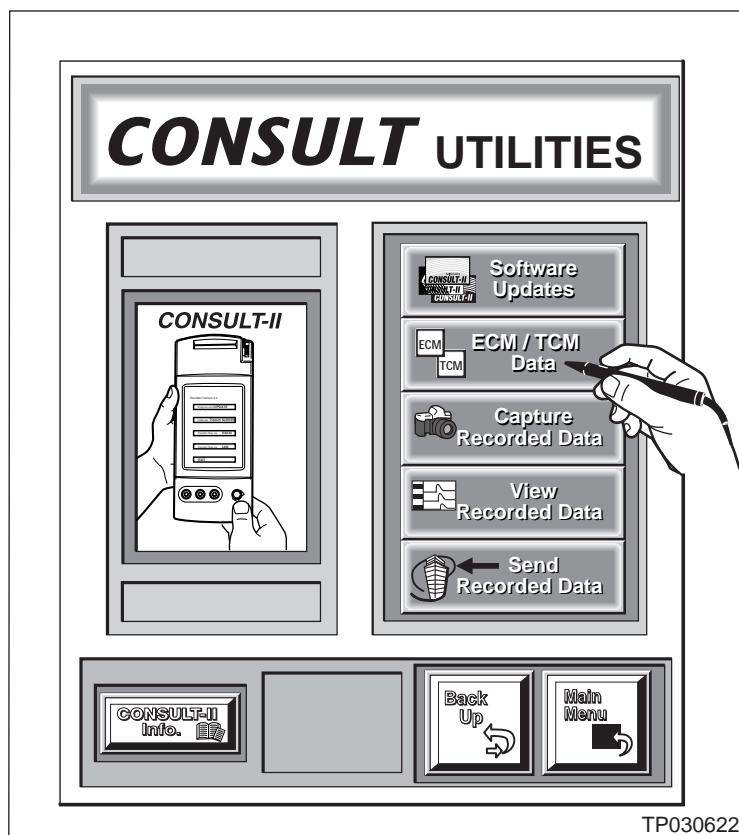


Figure 4

7. Select the "ECU REPROGRAMMING DATA" (see Figure 5) as follows:

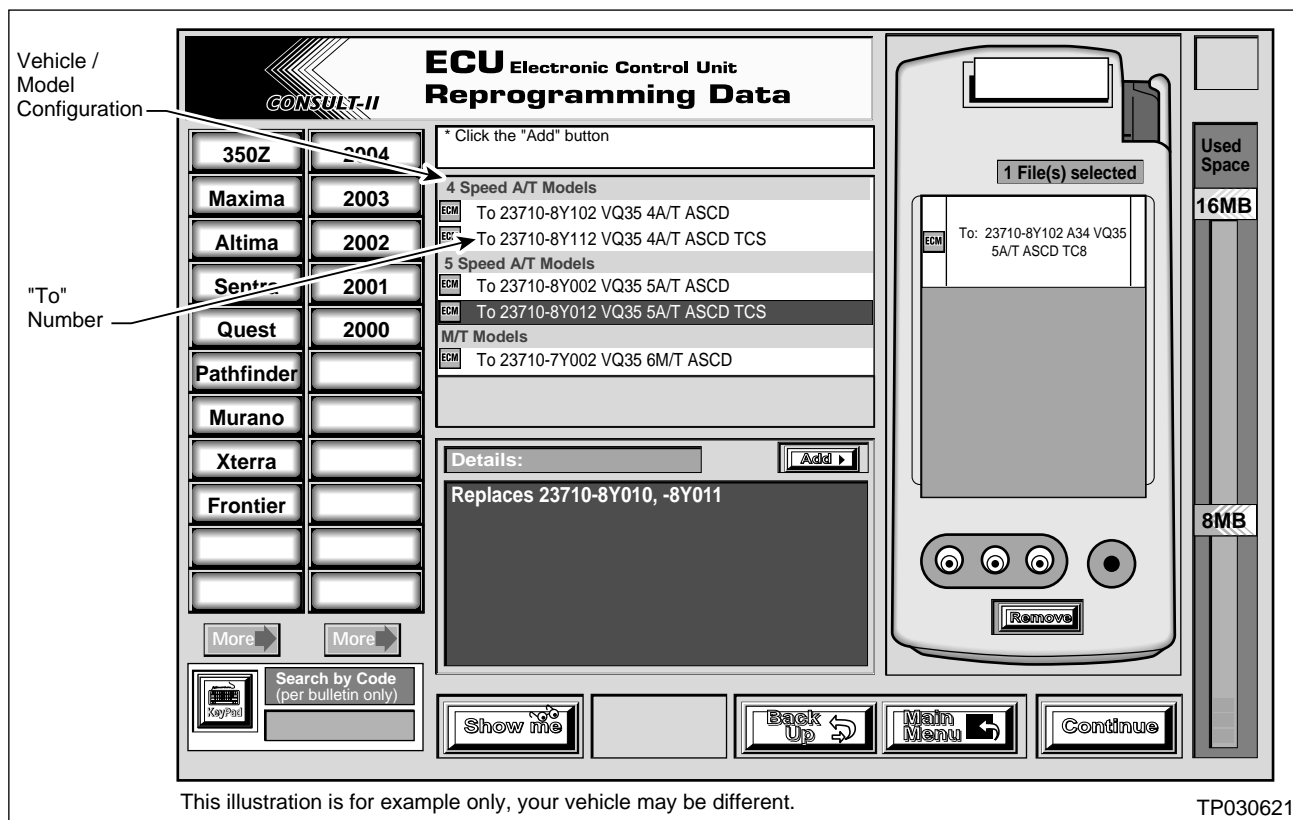


Figure 5

A. Select vehicle model and model year.

B. Select the correct reprogramming data:

1) Locate the specific "Model Configuration" (Example: VQ35 4A/T ASCD).

**NOTE:**

- Model Configuration may include items like engine type, transmission type, and vehicle options such as ASCD TCS, ABS, etc.
- Vehicle configuration can be verified using the "Current ECM P/N" chart. This will be shown in the TSB that told you to reprogram the ECM.

2) Select (click on) the "To" number.

**NOTE:** The "To" number reads: 23710-XXXXX.

3) Write the "To" number on the Repair Order. You will need it later in the reprogramming process.

C. Click on the "Add" button to add data to the "File(s) selected" list. This list is on the right side of the screen.

D. Click the "**CONTINUE**" button to proceed with CONSULT-II setup.

8. Turn "ON" CONSULT-II as shown in Figure 6.

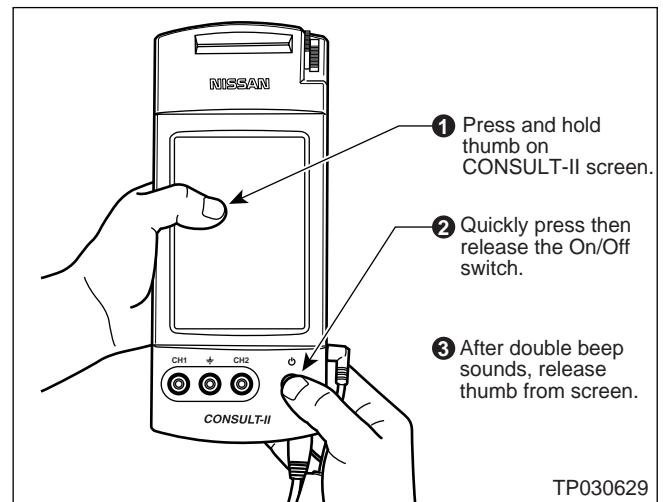


Figure 6

9. Select **Transfer files via LAN** (see Figure 7).

**NOTE:** If you accidentally choose a menu option other than "Transfer Files via LAN"; turn CONSULT-II "OFF", and then back "ON" as shown in Figure 6 above.

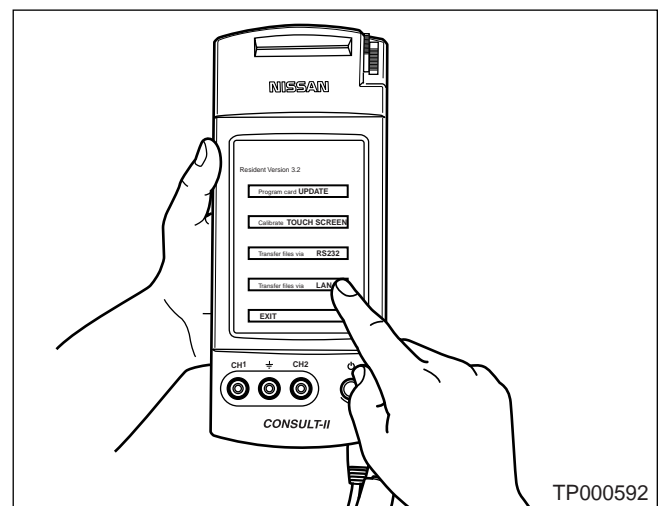


Figure 7

**Set the CONSULT-II unit down for now and go to your ASIST PC.**

10. Transfer (download) data from ASIST into CONSULT-II.

A. On the ASIST screen, click on "**Transfer**" (see Figure 8).

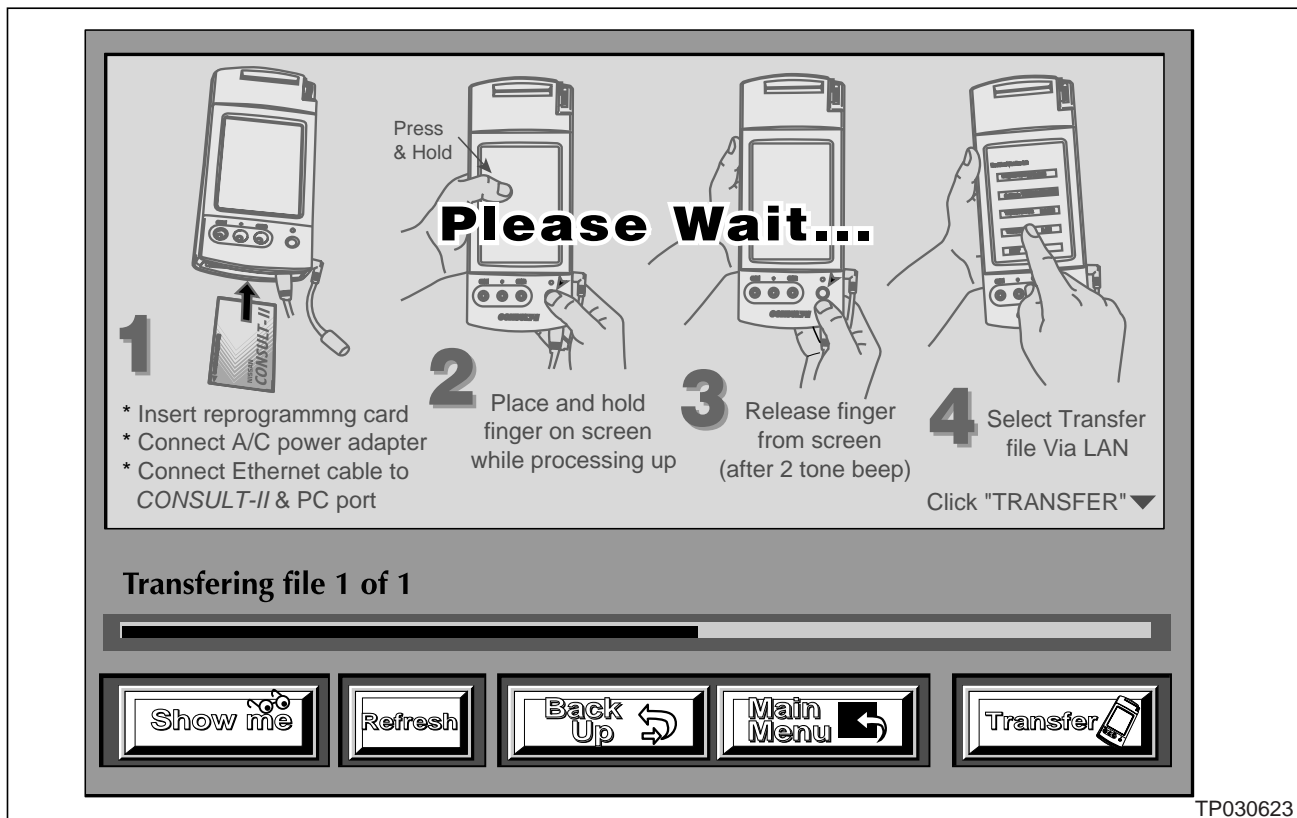


Figure 8

- Data transfer will take about 15 seconds per file.
- Transfer progress is displayed on the ASIST screen (see Figure 8).

B. Wait until the data transfer is complete (see CAUTION below).

**CAUTION: DO NOT DISCONNECT THE ETHERNET CABLE UNTIL "COMPLETE" IS DISPLAYED AS SHOWN IN FIGURE 9 ON THE NEXT PAGE.**

- If the cable is disconnected before "Complete" is displayed, you **MUST** restart the transfer (download) procedure; otherwise ECM damage can occur.
- If the cable is disconnected during the transfer; wait for ASIST to display an "error" message, then click on "OK". Select "Backup", then return to step 6 on page 4.

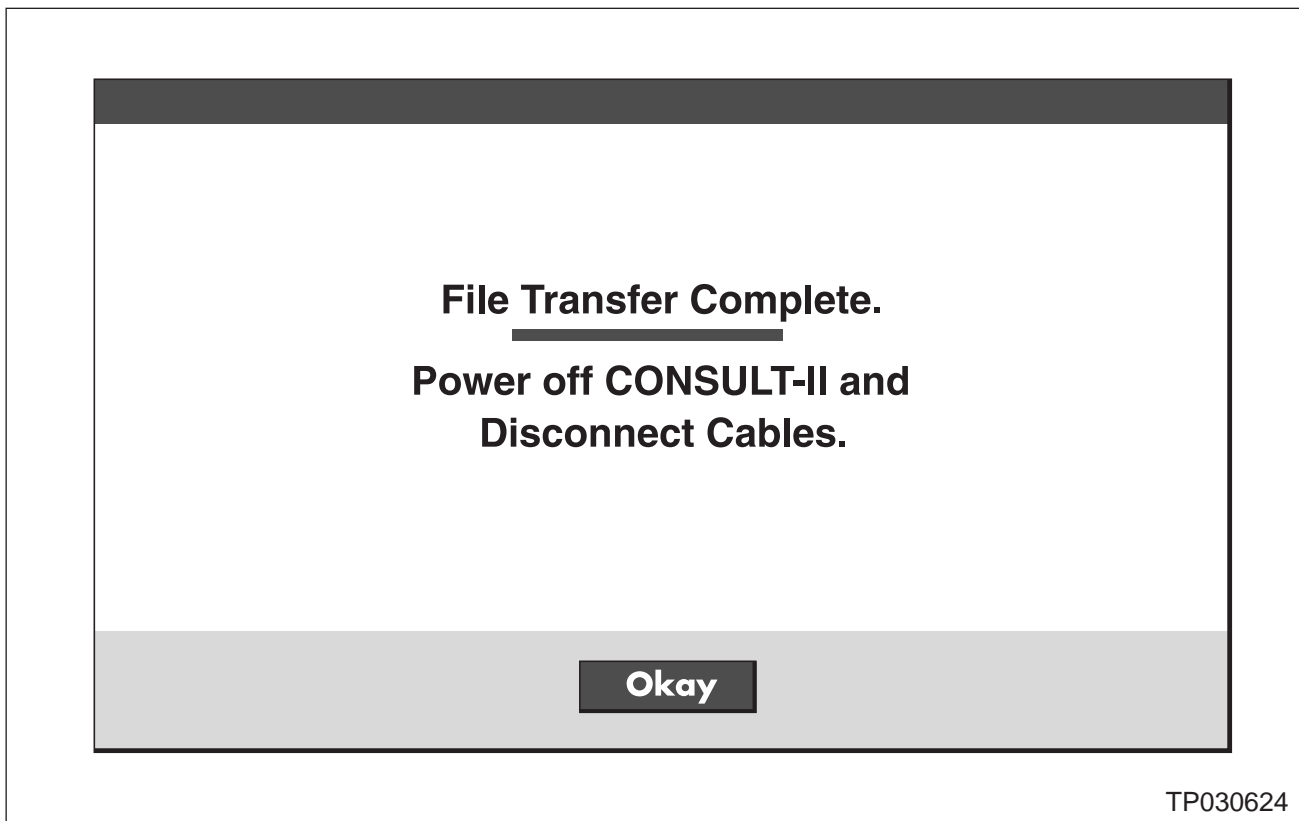


Figure 9

11. When transfer is complete (see Figure 9):

- A. Select (click on) "**Okay**", then "**MAIN MENU**".
- B. Turn "OFF" CONSULT-II.
- C. Disconnect the AC power cord and the Ethernet cable from CONSULT-II.



## DOWNLOAD NEW DATA FROM CONSULT-II INTO THE VEHICLE (REPROGRAM ECM)

### CAUTION:

- Perform this operation in four (4) sections. DO NOT SKIP any of these sections.
- They must be performed in order, 1 through 4.

Section 1: Connect a battery charger and CONSULT-II to the vehicle.

Section 2: Confirm the vehicle battery voltage and CONSULT-II "Charger Input".

Section 3: Perform ECM Reprogramming.

Section 4: Perform ECM Reprogram Confirmation.

### Section 1: Connect a battery charger and CONSULT-II to the vehicle.

12. Confirm the ignition switch is "OFF".

13. Connect a battery charger to the vehicle battery.

A. Set the charger at a low charge rate (trickle charge).

#### IMPORTANT

Do not perform ECU reprogramming without connecting a battery charger to the vehicle's battery. Permanent ECU damage can occur.

Connecting a vehicle battery charger will maintain:

- Proper CONSULT-II power supply during reprogramming—very important if the CONSULT-II battery is low.
- Vehicle battery voltage level—especially on late model vehicles where the cooling fans come on during reprogramming.

14. Connect CONSULT-II to the vehicle using the DLC-II cable with black Converter Box (see Figure 10 on next page).

### VERY IMPORTANT:

- Make sure the DLC-II is straight and fully plugged in to the vehicle.
- Make sure all other DLC-II cable connections shown in Figure 10 are connected properly.

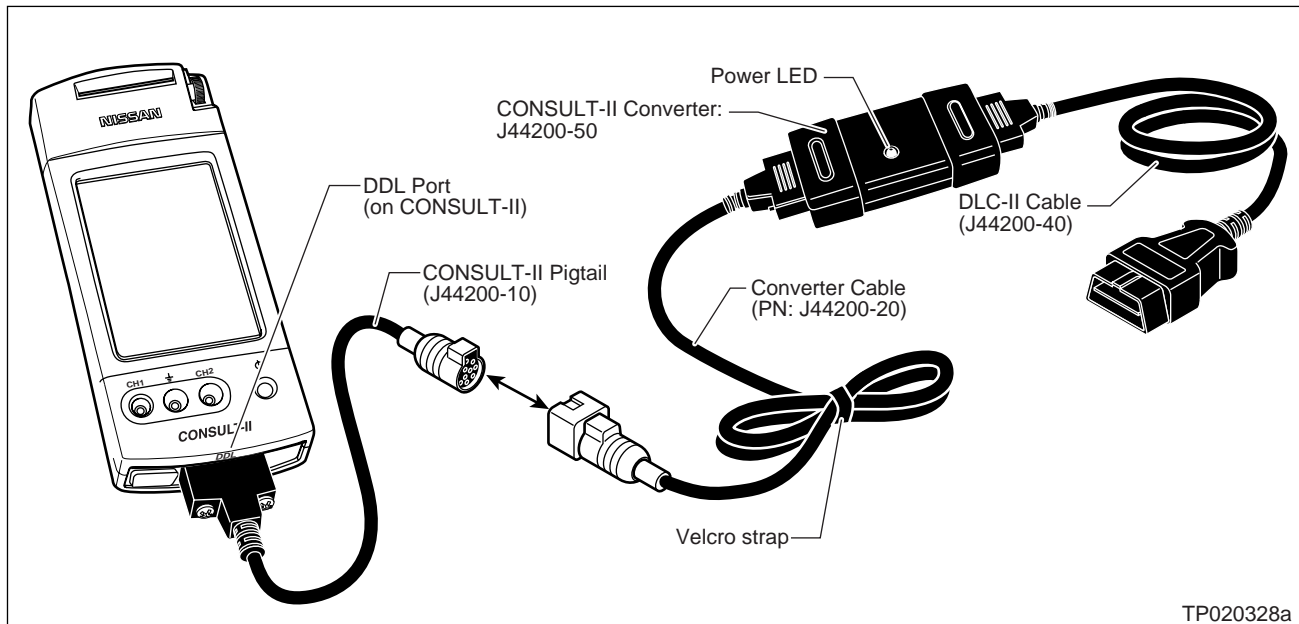


Figure 10

### CAUTION

- Nissan requires the use of essential tools shown in Figure 10 when performing ECM reprogramming.
- J44200-10 "Pigtail" should not be removed from the CONSULT-II DDL Port. This "Pigtail" allows use of the stronger "quick disconnect" cable set.
- If cables are very often changed at the DDL Port (base) of the CONSULT-II unit, cable connector pin damage may result.
- If there is connector pin damage, ECM reprogramming may fail. Permanent ECU damage can occur.

15. Turn "ON" the ignition switch (do not start the engine).

- CONSULT-II will turn "ON" automatically (see Figure 11).
- Confirm that all electrical loads\* (except for the ignition) are "OFF".

\* Headlights, defroster, A/C, Audio (radio), and cellular telephone, etc.

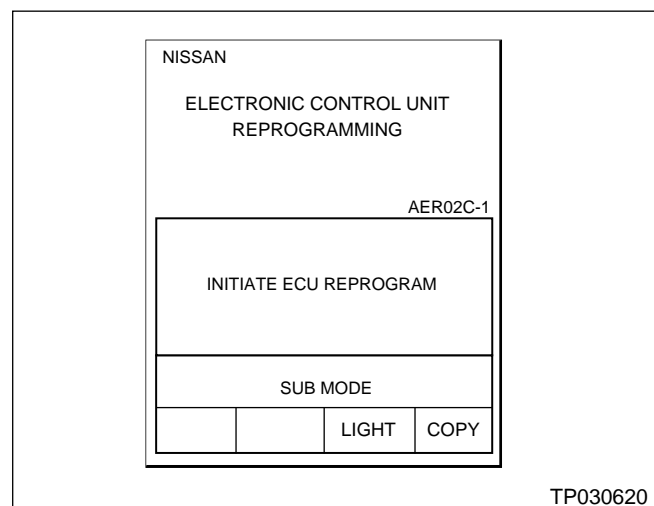


Figure 11

16. Roll down the driver's window part way, exit the vehicle, close the door, and hang the CONSULT II unit on the outside of the window (see Figure 12).

- This step is necessary to ensure the CONSULT-II and DLC-II cable will not be disturbed during reprogramming.

**CAUTION: DO NOT connect the CONSULT-II AC power supply for Steps 17, 18, and 19.**

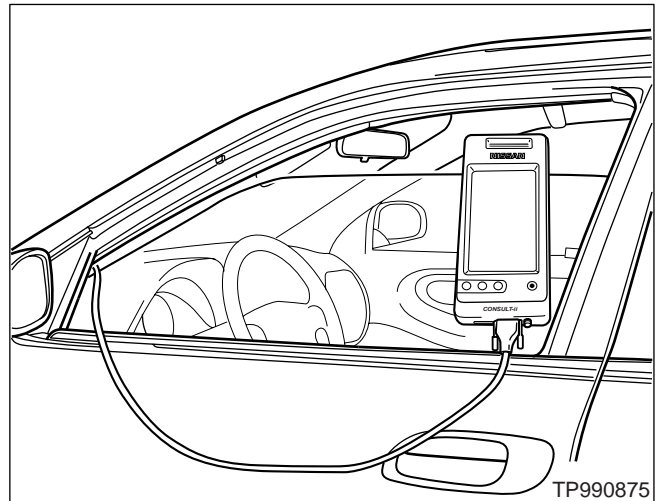


Figure 12

## Section 2: Confirm the vehicle's battery voltage and CONSULT-II "Charger Input"

17. Press **SUB MODE** (see Figure 11) then:

- Press **DOWN** 4 times.
- Select **BATTERY CHARGE**.

18. Check the CONSULT-II's "Charger Input" reading (see Figure 13).

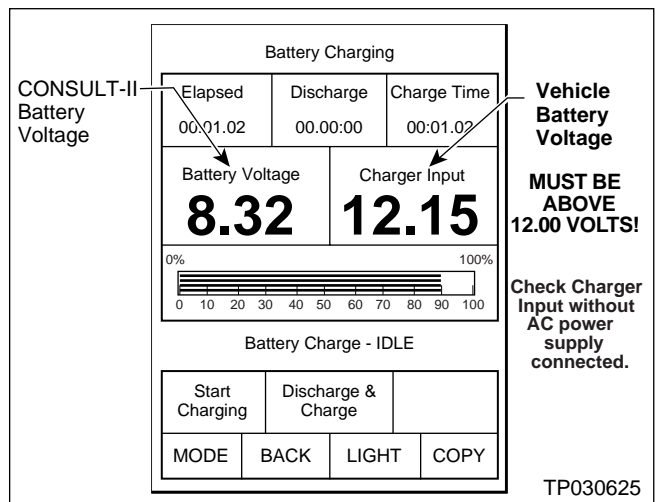


Figure 13

### NOTE:

- "Battery Voltage" is the voltage level of CONSULT-II's battery.
- "Charger Input" is the voltage level of the vehicle's battery. (It must be above 12 volts.).

19. The “Charger Input” reading **MUST** be above 12 volts (see Figure 13 on page 11).

- A reading above 12 volts confirms;
  - a. The DLC-II is properly connected to the vehicle,
  - b. The vehicle battery voltage is sufficient for ECM reprogramming, and
  - c. CONSULT-II has a sufficient power supply to perform ECM reprogramming.
- If the vehicle's battery voltage (“Charger Input”) is below 12 volts, one or more of the following may be the cause:
  - a. The battery charger you hooked up in section 1 is not charging the battery (poor connection or it is not working).
  - b. The DLC-II does not have a good connection to the vehicle (not straight).
  - c. The DLC-II cable may have a malfunction (damaged wire or pins).
  - d. The CONSULT-II Converter (J44200-50 / black box) is not working correctly (see Figure 10 on page 10).

**CAUTION:**

- Do not attempt ECU reprogramming if the vehicle's battery voltage is below 12 volts.
- Permanent ECU damage can occur if the vehicle battery does not maintain the minimum voltage during ECU reprogramming.
- If “Charger Input” is above 12 volts, power from the vehicle battery will keep CONSULT-II's power supply at the correct level during reprogramming. (see Figure 13).

## Section 3: Perform ECM Reprogramming

20. Press **INITIATE ECU REPROGRAM** (see Figure 14), then

- A. Press **ECM**
- B. Review the precaution
- C. Press **NEXT**

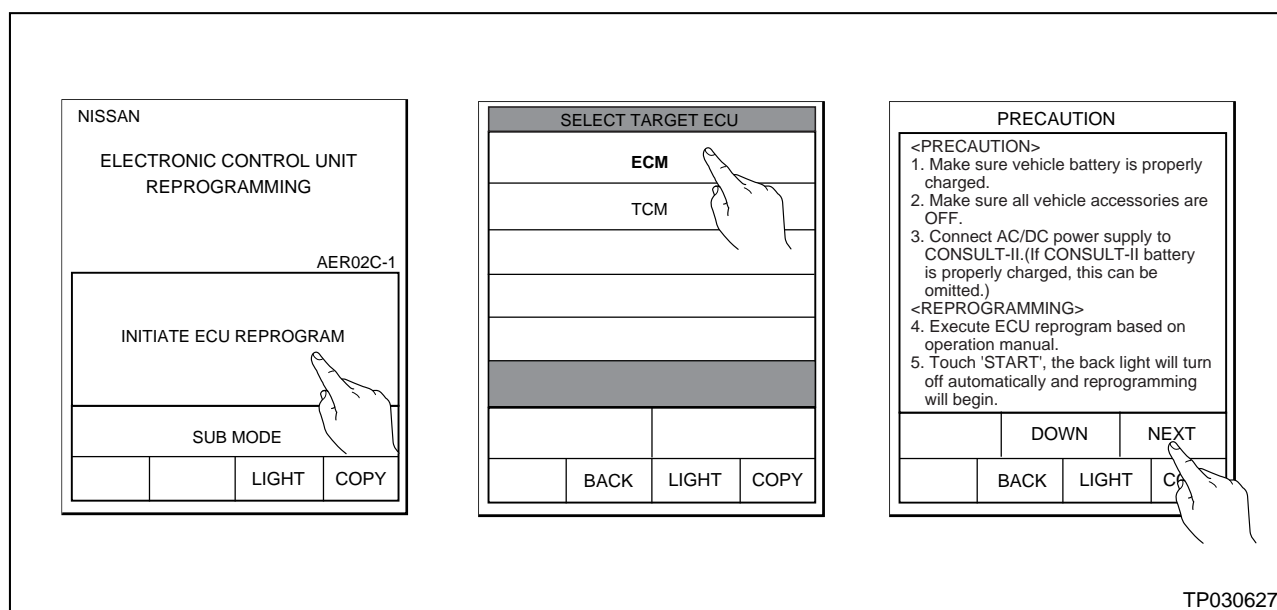


Figure 14

21. Press **CHECK ECM P/N** to “confirm” (take note of) the current ECM part number (see Figure 15).

**NOTE:** This is the vehicle’s ECM part number BEFORE reprogramming.

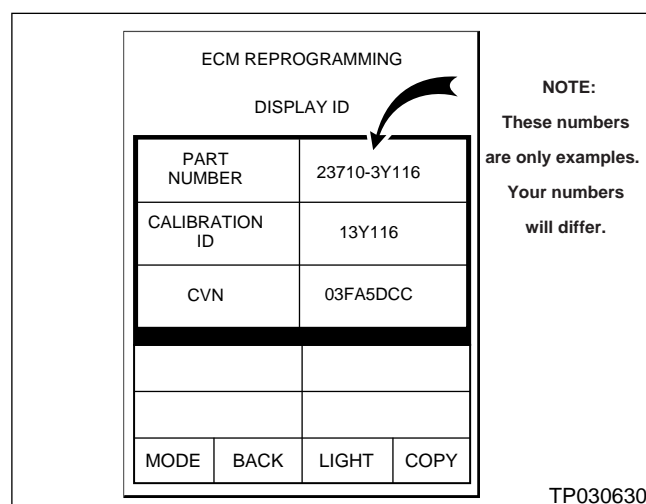


Figure 15

22. Press **COPY** to print the current ECM part number for future reference.

23. Press **BACK** to return to the main menu.

24. Select the ECM program to install (see Figure 16).

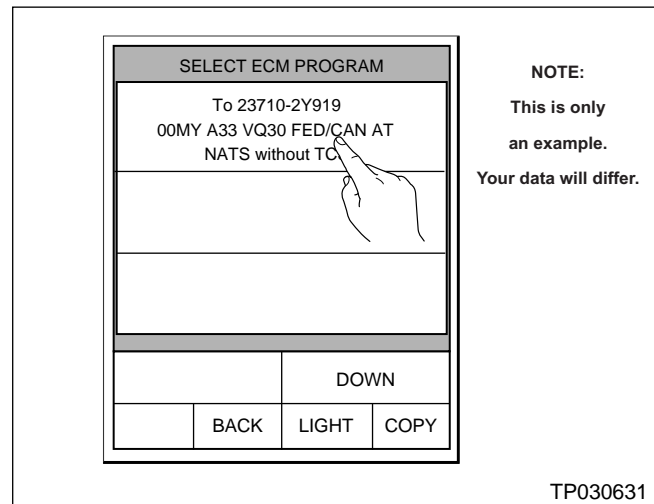


Figure 16

25 The "**REPROGRAM START**" window should appear (see Figure 17).

- **NOTE:** If you get an error message, refer to the ECU Reprogramming Software Operations Manual.

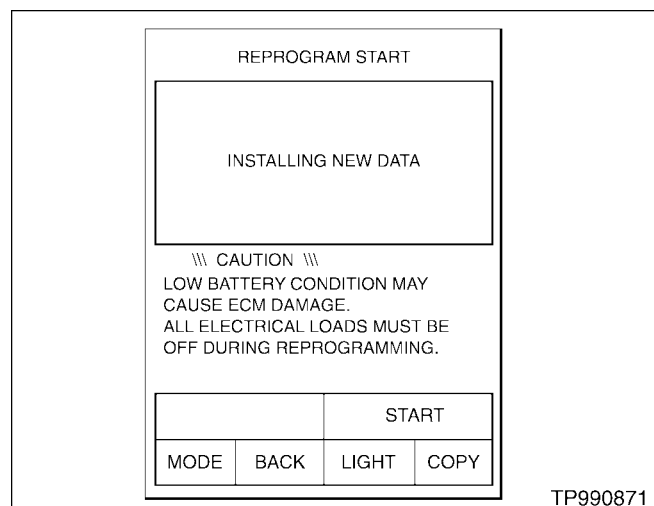


Figure 17

### CAUTION DURING REPROGRAMMING:

- Do not unplug CONSULT-II from the vehicle during reprogramming. Permanent ECM damage can occur.
- Do not open any door or the trunk during reprogramming.
- On some vehicles, the cooling fans may come on during reprogramming. This is a normal condition. Do not disconnect the cooling fans. Forgetting to reconnect them may cause severe engine damage. A vehicle battery charger is needed\* to maintain the battery voltage level during reprogramming.

\* You should have hooked up a battery charger in Section 1

26. Press **START**.

- After a few seconds, the window shown in Figure 18 will appear.
- CONSULT-II will now turn "OFF" its screen backlight.
- When the screen backlight goes "OFF", ECM reprogramming has started.

**NOTE:** This process will take from 10 to 20 minutes.

**CAUTION:** You must leave the vehicle and the CONSULT-II unit "undisturbed" (don't touch) until reprogramming is complete.

**NOTE:** If CONSULT-II screen gives you an error message "Unmatch of Vehicle Data":

- You tried to reprogram with an incorrect data file, or
- You are trying to reprogram with a file that is already in the ECM.

27. When the reprogramming is complete, CONSULT-II will "beep", turn the screen backlight back "ON" and automatically print out a report (see Figure 19).

- Remember it may take up to 20 minutes.

A. Attach the print-out to the repair order for future reference.

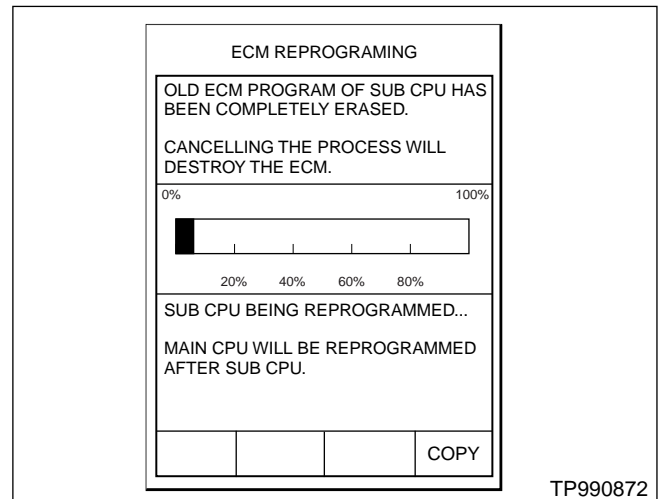


Figure 18

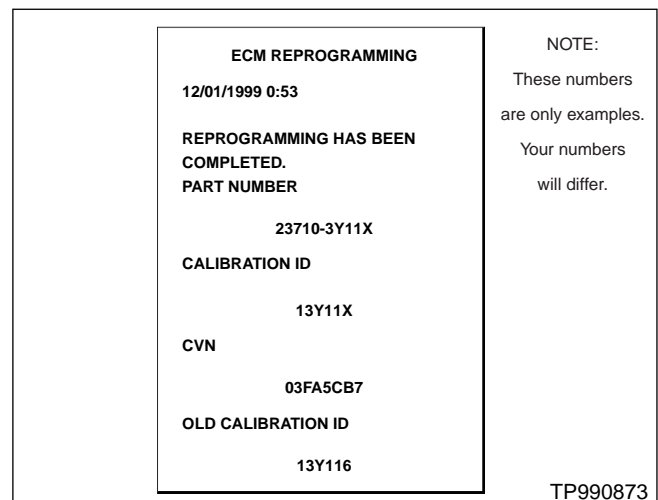


Figure 19

### CAUTION

If CONSULT-II prints "REPROGRAMMING UNEXPECTEDLY TERMINATED":

- The ECM has been permanently damaged and will require replacement.
- In this case, perform steps A through G on page 16.

**Do not start the engine with the damaged ECM installed.**

28. Press **END** to return to the main menu.

29. Turn the ignition switch "OFF" and CONSULT-II "OFF".

30. **Wait more than 10 seconds, then turn the ignition switch "ON" for 1 second. Then, turn the ignition switch "OFF" again for 10 seconds (see Figure 20).**

- This will reset ECM self learned Data.

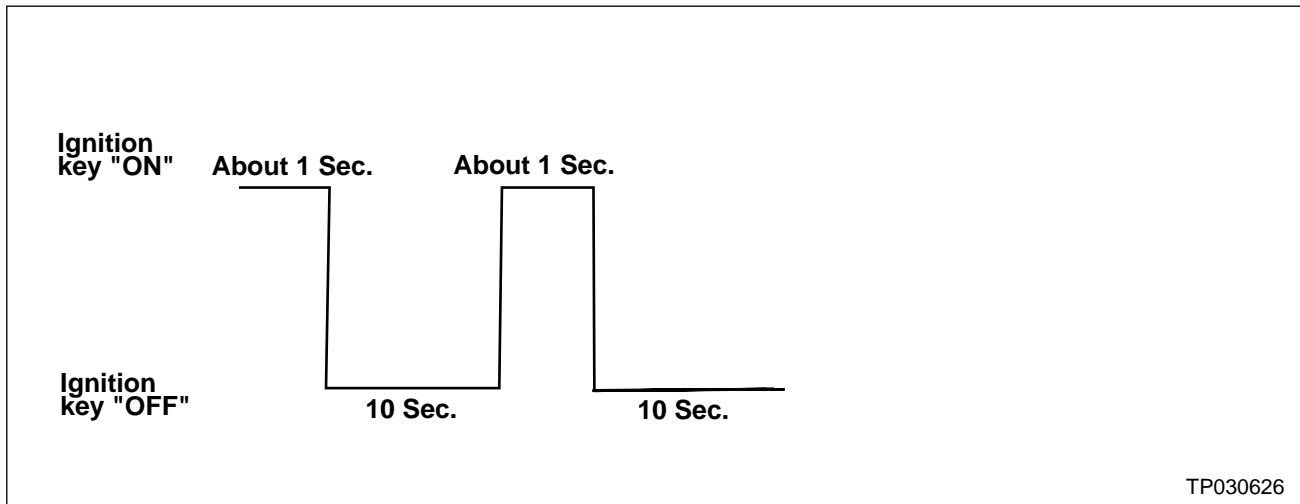


Figure 20

#### Section 4: Perform ECM Reprogram Confirmation.

31. Start the engine.

32. Check engine idle speed.

- If idle speed is too low, perform IAVL (Idle Air Volume Learning). See the appropriate Service Manual (ESM) for this procedure.

**NOTE:** If the engine will not idle, hold the engine RPM at about 2000, then slowly bring it down to an idle. IAVL can now be performed.

33. Confirm the engine is operating normally.

34. Make sure the "Check Engine Light " (MIL) is not "ON".

- If necessary, use CONSULT-II and the Diagnostic (red/white) Card to erase any DTC's that may have stored during the reprogramming procedure.

**END**



## **PROGRAMMING UNEXPECTEDLY TERMINATED**

**(See step 27 on page 15):**

- The ECM has been permanently damaged and will require replacement.
- Perform steps A through G below.

**CAUTION: Do not start the engine with the damaged ECM installed.**

- A. Turn the ignition "OFF", turn CONSULT-II "OFF", and DISCONNECT THE NEGATIVE TERMINAL OF THE VEHICLE BATTERY.
- B. Attach the CONSULT-II print-out to the repair order for future reference.
- C. Replace the damaged ECM.
- D. Reconnect the negative battery cable.
- E. If the vehicle is equipped with NATS:
  - Some models will require registration of the NATS keys.
  - See the appropriate TSB(s) or Service Manual (ESM) for NATS information and key registration procedures.
- F. Perform IAVL (Idle Air Volume Learning). See the appropriate Service Manual (ESM) for this procedure.
- G. Check the new ECM's current P/N.
  - 1). Make sure it is the latest (newest) P/N.
  - 2). See step 21 on page 13.

### **NOTE:**

- A new ECM from the parts department may not have the newest program.
- If needed, return to step 5 on page 4 of this procedure and reprogram the new ECM with the latest available P/N. Be careful to follow each step exactly as written.

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### **For Those Who Are Experienced With ECU Reprogramming**

- ASIST 8.0 and later has some new advanced functions for selecting and downloading reprogramming data that are not covered in these instructions.
- For information on these new functions and other ASIST 8.0 enhancements, see the article—"ASIST 8.0 Has Arrived"—in the July / August 2003 issue of TechTalk.